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NEWS 1		Web Page URLs for STN Seminar Schedule - N. America
NEWS 2		"Ask CAS" for self-help around the clock
NEWS 3	Feb 24	PCTGEN now available on STN
NEWS 4	Feb 24	TEMA now available on STN
NEWS 5	Feb 26	NTIS now allows simultaneous left and right truncation
NEWS 6	Feb 26	PCTFULL now contains images
NEWS 7	Mar 04	SDI PACKAGE for monthly delivery of multifile SDI results
NEWS 8	Mar 24	PATDPAFULL now available on STN
NEWS 9	Mar 24	Additional information for trade-named substances without structures available in REGISTRY
NEWS 10	Apr 11	Display formats in DGENE enhanced
NEWS 11	Apr 14	MEDLINE Reload
NEWS 12	Apr 17	Polymer searching in REGISTRY enhanced
NEWS 13	AUG 22	Indexing from 1927 to 1936 added to records in CA/CAPLUS
NEWS 14	Apr 21	New current-awareness alert (SDI) frequency in WPIDS/WPINDEX/WPIX
NEWS 15	Apr 28	RDISCLOSURE now available on STN
NEWS 16	May 05	Pharmacokinetic information and systematic chemical names added to PHAR
NEWS 17	May 15	MEDLINE file segment of TOXCENTER reloaded
NEWS 18	May 15	Supporter information for ENCOMPPAT and ENCOMPLIT updated
NEWS 19	May 19	Simultaneous left and right truncation added to WSCA
NEWS 20	May 19	RAPRA enhanced with new search field, simultaneous left and right truncation
NEWS 21	Jun 06	Simultaneous left and right truncation added to CBNB
NEWS 22	Jun 06	PASCAL enhanced with additional data
NEWS 23	Jun 20	2003 edition of the FSTA Thesaurus is now available
NEWS 24	Jun 25	HSDB has been reloaded
NEWS 25	Jul 16	Data from 1960-1976 added to RDISCLOSURE
NEWS 26	Jul 21	Identification of STN records implemented
NEWS 27	Jul 21	Polymer class term count added to REGISTRY
NEWS 28	Jul 22	INPADOC: Basic index (/BI) enhanced; Simultaneous Left and Right Truncation available
NEWS 29	AUG 05	New pricing for EUROPATFULL and PCTFULL effective August 1, 2003
NEWS 30	AUG 13	Field Availability (/FA) field enhanced in BEILSTEIN
NEWS 31	AUG 15	PATDPAFULL: one FREE connect hour, per account, in September 2003
NEWS 32	AUG 15	PCTGEN: one FREE connect hour, per account, in September 2003
NEWS 33	AUG 15	RDISCLOSURE: one FREE connect hour, per account, in September 2003
NEWS 34	AUG 15	TEMA: one FREE connect hour, per account, in September 2003
NEWS 35	AUG 18	Data available for download as a PDF in RDISCLOSURE
NEWS 36	AUG 18	Simultaneous left and right truncation added to PASCAL
NEWS 37	AUG 18	FROSTI and KOSMET enhanced with Simultaneous Left and Right Truncation

NEWS 38 AUG 18 Simultaneous left and right truncation added to ANABSTR

NEWS EXPRESS April 4 CURRENT WINDOWS VERSION IS V6.01a, CURRENT
MACINTOSH VERSION IS V6.0b(ENG) AND V6.0Jb(JP),
AND CURRENT DISCOVER FILE IS DATED 01 APRIL 2003
NEWS HOURS STN Operating Hours Plus Help Desk Availability
NEWS INTER General Internet Information
NEWS LOGIN Welcome Banner and News Items
NEWS PHONE Direct Dial and Telecommunication Network Access to STN
NEWS WWW CAS World Wide Web Site (general information)

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FILE 'HOME' ENTERED AT 08:53:34 ON 05 SEP 2003

=> index bioscience
FILE 'DRUGMONOG' ACCESS NOT AUTHORIZED

COST IN U.S. DOLLARS	SINCE FILE ENTRY	TOTAL SESSION
FULL ESTIMATED COST	0.21	0.21

INDEX 'ADISCTI, ADISINSIGHT, ADISNEWS, AGRICOLA, ANABSTR, AQUASCI, BIOBUSINESS, BIOCOMMERCE, BIOSIS, BIOTECHABS, BIOTECHDS, BIOTECHNO, CABA, CANCERLIT, CAPLUS, CEABA-VTB, CEN, CIN, CONFSCI, CROPB, CROPU, DDFB, DDFU, DGENE, DRUGB, DRUGLAUNCH, DRUGMONOG2, ...' ENTERED AT 08:53:47 ON 05 SEP 2003

67 FILES IN THE FILE LIST IN STNINDEX

Enter SET DETAIL ON to see search term postings or to view search error messages that display as 0* with SET DETAIL OFF.

=> s cellulase or endoglucanase

3	FILE ADISCTI
1	FILE ADISNEWS
3619	FILE AGRICOLA
145	FILE ANABSTR
305	FILE AQUASCI
1849	FILE BIOBUSINESS
169	FILE BIOCOMMERCE
9797	FILE BIOSIS
6424	FILE BIOTECHABS
6424	FILE BIOTECHDS
3094	FILE BIOTECHNO
5657	FILE CABA
40	FILE CANCERLIT
17813	FILE CAPLUS
2094	FILE CEABA-VTB
24	FILE CEN
111	FILE CIN
274	FILE CONFSCI
168	FILE CROPB
227	FILE CROPU
76	FILE DDFB
37	FILE DDFU
4817	FILE DGENE

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        76   FILE DRUGB
        75   FILE DRUGLAUNCH
       285   FILE DRUGMONOG2
        51   FILE DRUGU
        22   FILE EMBAL
      3367   FILE EMBASE
      2060   FILE ESBIOBASE
  33 FILES SEARCHED...
       168   FILE FEDRIP
        65   FILE FOREGE
       880   FILE FROSTI
      2359   FILE FSTA
      2131   FILE GENBANK
        21   FILE HEALSAFE
      1400   FILE IFIPAT
      1780   FILE JICST-EPLUS
         5   FILE KOSMET
      3755   FILE LIFESCI
         3   FILE MEDICONF
      2992   FILE MEDLINE
        12   FILE NIOSHTIC
       358   FILE NTIS
       108   FILE OCEAN
      5270   FILE PASCAL
        11   FILE PHIN
       353   FILE PROMT
        20   FILE RDISCLOSURE
      7180   FILE SCISEARCH
         1   FILE SYNTHLINE
      1839   FILE TOXCENTER
      5305   FILE USPATFULL
       185   FILE USPAT2
        10   FILE VETB
       222   FILE VETU
      2745   FILE WPIDS
      2745   FILE WPINDEX

  58 FILES HAVE ONE OR MORE ANSWERS,   67 FILES SEARCHED IN STNINDEX

L1   QUE CELLULASE OR ENDOGLUCANASE

=> d rank
F1       17813   CAPLUS
F2        9797   BIOSIS
F3        7180   SCISEARCH
F4        6424   BIOTECHABS
F5        6424   BIOTECHDS
F6        5657   CABA
F7        5305   USPATFULL
F8        5270   PASCAL
F9        4817   DGENE
F10       3755   LIFESCI
F11       3619   AGRICOLA
F12       3367   EMBASE
F13       3094   BIOTECHNO
F14       2992   MEDLINE
F15       2745   WPIDS
F16       2745   WPINDEX
F17       2359   FSTA
F18       2131   GENBANK
F19       2094   CEABA-VTB
F20       2060   ESBIOBASE
F21       1849   BIOBUSINESS
F22       1839   TOXCENTER
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F23	1780	JICST-EPLUS
F24	1400	IFIPAT
F25	880	FROSTI
F26	358	NTIS
F27	353	PROMT
F28	305	AQUASCI
F29	285	DRUGMONOG2
F30	274	CONFSCI
F31	227	CROPU
F32	222	VETU
F33	185	USPAT2
F34	169	BIOCOMMERCE
F35	168	CROPB
F36	168	FEDRIP
F37	145	ANABSTR
F38	111	CIN
F39	108	OCEAN
F40	76	DDFB
F41	76	DRUGB
F42	75	DRUGLAUNCH
F43	65	FOREGE
F44	51	DRUGU
F45	40	CANCERLIT
F46	37	DDFU
F47	24	CEN
F48	22	EMBAL
F49	21	HEALSAFE
F50	20	RDISCLOSURE
F51	12	NIOSHTIC
F52	11	PHIN
F53	10	VETB
F54	5	KOSMET
F55	3	ADISCTI
F56	3	MEDICONF
F57	1	ADISNEWS
F58	1	SYNTHLINE

=> file f1-f8, f10-f14

COST IN U.S. DOLLARS	SINCE FILE ENTRY	TOTAL SESSION
FULL ESTIMATED COST	1.65	1.86

FILE 'CAPLUS' ENTERED AT 08:55:22 ON 05 SEP 2003
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FILE 'BIOSIS' ENTERED AT 08:55:22 ON 05 SEP 2003
COPYRIGHT (C) 2003 BIOLOGICAL ABSTRACTS INC.(R)

FILE 'SCISEARCH' ENTERED AT 08:55:22 ON 05 SEP 2003
COPYRIGHT 2003 THOMSON ISI

FILE 'BIOTECHABS' ACCESS NOT AUTHORIZED

FILE 'BIOTECHDS' ENTERED AT 08:55:22 ON 05 SEP 2003
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FILE 'CABA' ENTERED AT 08:55:22 ON 05 SEP 2003
COPYRIGHT (C) 2003 CAB INTERNATIONAL (CABI)

FILE 'USPATFULL' ENTERED AT 08:55:22 ON 05 SEP 2003
CA INDEXING COPYRIGHT (C) 2003 AMERICAN CHEMICAL SOCIETY (ACS)

FILE 'PASCAL' ENTERED AT 08:55:22 ON 05 SEP 2003

FILE 'LIFESCI' ENTERED AT 08:55:22 ON 05 SEP 2003

FILE 'AGRICOLA' ENTERED AT 08:55:22 ON 05 SEP 2003

FILE 'EMBASE' ENTERED AT 08:55:22 ON 05 SEP 2003

FILE 'BIOTECHNO' ENTERED AT 08:55:22 ON 05 SEP 2003

FILE 'MEDLINE' ENTERED AT 08:55:22 ON 05 SEP 2003

=> s l1 and cellulovorans
L2 445 L1 AND CELLULOVORANS

=> s l2 and cellulozome
L3 6 L2 AND CELLULOZOME

=> dup rem l3
PROCESSING COMPLETED FOR L3
L4 6 DUP REM L3 (0 DUPLICATES REMOVED)

=> d l4 ibib ab 1-6

L4 ANSWER 1 OF 6 USPATFULL on STN
ACCESSION NUMBER: 2002:276045 USPATFULL
TITLE: Laundry detergent and/or fabric care compositions comprising a modified enzyme
INVENTOR(S): Smets, Johan, Lubbeek, BELGIUM
Bettiol, Jean-Luc Philippe, Brussels, BELGIUM
Boyer, Stanton Lane, Fairfield, OH, United States
Busch, Alfred, Londerzeel, BELGIUM
PATENT ASSIGNEE(S): The Proctor & Gamble Company, Cincinnati, OH, United States (U.S. corporation)

	NUMBER	KIND	DATE	
PATENT INFORMATION:	US 6468955	B1	20021022	
	WO 9957252		19991111	
APPLICATION INFO.:	US 2000-674478		20001101	(9)
	WO 1999-US9453		19990430	

	NUMBER	DATE
PRIORITY INFORMATION:	WO 1998-US8856	19980501

DOCUMENT TYPE: Utility
FILE SEGMENT: GRANTED
PRIMARY EXAMINER: Kopec, Mark
ASSISTANT EXAMINER: Elhilo, Eisa
LEGAL REPRESENTATIVE: Taffy, Frank, Cook, C. Brant, Zerby, K. W.
NUMBER OF CLAIMS: 8
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 0 Drawing Figure(s); 0 Drawing Page(s)
LINE COUNT: 2792
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB Modified enzymes which comprise a catalytically active amino acid sequence of an enzyme, linked via a non-mino acid linking region to an amino acid sequence comprising a Cellulose Binding Domain. The present invention further relates to laundry detergent and/or fabric care compositions comprising such modified enzymes. These compositions provide a higher effective concentration of the enzyme at its substrate location and therefore, improved enzymatic benefits.

L4 ANSWER 2 OF 6 USPATFULL on STN

ACCESSION NUMBER:	2002:268719 USPATFULL			
TITLE:	Laundry detergent and/or fabric care composition comprising a modified antimicrobial protein			
INVENTOR(S):	Bettiol, Jean-Luc Philippe, Brussels, BELGIUM Smets, Johan, Lubbeek, BELGIUM Boyer, Stanton Lane, Fairfield, OH, United States			
PATENT ASSIGNEE(S):	The Procter & Gamble, Cincinnati, OH, United States (U.S. corporation)			
	NUMBER	KIND	DATE	
PATENT INFORMATION:	US 6465410	B1	20021015	
	WO 9957157		19991111	
APPLICATION INFO.:	US 2000-674471		20001101	(9)
	WO 1999-US9455		19990430	
DOCUMENT TYPE:	Utility			
FILE SEGMENT:	GRANTED			
PRIMARY EXAMINER:	Gupta, Yogendra N.			
ASSISTANT EXAMINER:	Elhilo, Eisa			
LEGAL REPRESENTATIVE:	Cook, C. Brant, Zerby, Kim W., Miller, Steve W.			
NUMBER OF CLAIMS:	8			
EXEMPLARY CLAIM:	1			
NUMBER OF DRAWINGS:	0 Drawing Figure(s); 0 Drawing Page(s)			
LINE COUNT:	2894			

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB A modified protein which comprises a catalytically active amino acid sequence of an antimicrobial enzyme and/or an amino acid sequence of an antimicrobial peptide linked to an amino acid sequence comprising a cellulose binding domain (CBD), and laundry detergents and/or fabric care compositions comprising such modified protein for improved sanitization benefits, are provided by the present invention.

L4 ANSWER 3 OF 6 USPATFULL on STN

ACCESSION NUMBER:	2002:152607 USPATFULL			
TITLE:	Laundry detergent and/or fabric care compositions comprising a modified transferase			
INVENTOR(S):	Smets, Johan, Lubbeek, BELGIUM Barnabas, Mary Vijayarani, West Chester, OH, United States Showell, Michael Stanford, Cincinnati, OH, United States Boyer, Stanton Lane, Fairfield, OH, United States Convents, Andre Christian, Cincinnati, OH, United States			
PATENT ASSIGNEE(S):	Procter & Gamble Company, Cincinnati, OH, United States (U.S. corporation)			
	NUMBER	KIND	DATE	
PATENT INFORMATION:	US 6410498	B1	20020625	
	WO 9957254		19991111	
APPLICATION INFO.:	US 2000-674472		20001111	(9)
	WO 1999-US9480		19990430	
			20001101	PCT 371 date
DOCUMENT TYPE:	Utility			

FILE SEGMENT: GRANTED
PRIMARY EXAMINER: Douyon, Lorna M.
ASSISTANT EXAMINER: Elhilo, Eisa
LEGAL REPRESENTATIVE: Cook, C. Brant, Zerby, Kim W., Miller, Steve W.
NUMBER OF CLAIMS: 38
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 0 Drawing Figure(s); 0 Drawing Page(s)
LINE COUNT: 3228
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB The present invention relates to a modified enzyme which comprises a catalytically active amino acid sequence of a transferase linked to an amino acid sequence comprising a Cellulose Binding Domain (CBD). The present invention further relates to laundry detergent and/or fabric care compositions comprising such modified enzyme, for improved fabric care and cleaning benefits.

L4 ANSWER 4 OF 6 CAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1999:723159 CAPLUS
DOCUMENT NUMBER: 131:324167
TITLE: Laundry detergent and/or fabric care compositions comprising a modified transferase
INVENTOR(S): Smets, Johan; Barnabas, Mary Vijayarani; Showell, Michael Stanford; Boyer, Stanton Lane; Convents, Andre Christian
PATENT ASSIGNEE(S): Procter & Gamble Co., USA
SOURCE: PCT Int. Appl., 106 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9957258	A1	19991111	WO 1998-US8905	19980501
W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, GW, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG				
AU 9874709	A1	19991123	AU 1998-74709	19980501
CA 2330488	AA	19991111	CA 1999-2330488	19990430
WO 9957254	A1	19991111	WO 1999-US9480	19990430
W: AE, AL, AM, AT, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, CZ, DE, DE, DK, DK, EE, EE, ES, FI, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
AU 9939683	A1	19991123	AU 1999-39683	19990430
EP 1075509	A1	20010214	EP 1999-922758	19990430
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, PT, IE, FI				
BR 9910147	A	20011002	BR 1999-10147	19990430
JP 2002513563	T2	20020514	JP 2000-547210	19990430
US 6410498	B1	20020625	US 2000-674472	20001111

PRIORITY APPLN. INFO.: WO 1998-US8905 A 19980501
WO 1999-US9480 W 19990430

AB The present invention relates to a modified enzyme which comprises a

catalytically active amino acid sequence of a transferase linked to an amino acid sequence comprising a Cellulose Binding Domain (CBD). A specific embodiment comprises CBD-transferase, which is dextransucrase or transglutaminase or Toruzyme linked by PEG(NPC)2 to the cellulose-binding domain **Cellulozome** from Clostridium **cellulovorans**. The laundry detergent and/or fabric care compn. preferably further comprises a detergent ingredient selected from an anionic surfactant (alkyl sulfate, alkyl ethoxy sulfate, linear alkylene sulfonate), nonionic surfactant (alkyl ethoxylate), cationic surfactants, enzymes (protease, **cellulase**, lipase, amylase), bleaching agents, dye transfer inhibiting agents, dispersants, and smectite clay. The present invention further relates to laundry detergent and/or fabric care compns. comprising such modified enzyme, for improved fabric care and cleaning benefits.

REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 5 OF 6 CAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1999:723157 CAPLUS
DOCUMENT NUMBER: 131:338639
TITLE: Laundry detergent and/or fabric care compositions comprising a modified **cellulase**
INVENTOR(S): Busch, Alfred; Bettiol, Jean-luc Philippe; Smets, Johan; Boyer, Stanton Lane
PATENT ASSIGNEE(S): Procter & Gamble Co., USA
SOURCE: PCT Int. Appl., 87 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9957256	A1	19991111	WO 1998-US8903	19980501
W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, GW, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG				
AU 9875641	A1	19991123	AU 1998-75641	19980501
CA 2330394	AA	19991111	CA 1999-2330394	19990430
WO 9957260	A1	19991111	WO 1999-US9481	19990430
W: BR, CA, CN, IN, JP, MX, US				
RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
EP 1073726	A1	20010207	EP 1999-920213	19990430
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, PT, IE, FI				
JP 2002513565	T2	20020514	JP 2000-547216	19990430

PRIORITY APPLN. INFO.: WO 1998-US8903 A 19980501
WO 1999-US9481 W 19990430

AB The present invention relates to a modified enzyme and laundry detergent and/or fabric care compns. comprising this modified enzyme. This modified enzyme comprises a catalytically active amino acid sequence of a cellulolytic enzyme **endoglucanase** I linked to an amino acid sequence comprising a Cellulose Binding Domain (CBD). A specific embodiment comprises CBD-Endolase, which is the cellulolytic enzyme core derived from the enzyme sold under the tradename Endolase linked by PEG(NPC)2 (mol. wt. 3400) to the CBD **Cellulozome** from Clostridium **cellulovorans**. The laundry detergent and/or fabric care compns. preferably further comprise a detergent ingredient selected from cationic surfactants, proteolytic enzymes, bleaching agents, builders

(in particular zeolite A and sodium tripolyphosphate) and/or clays. These compns. provide excellent overall cleaning including stain removal and whitening maintenance, while preventing any neg. effect on the fabric. These compns. further provide fabric care, including anti-bobbling, depilling, color appearance, fabric softness and fabric anti-wear properties and benefits, while preventing any neg. effect on the fabric.
REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 6 OF 6 CAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1999:723153 CAPLUS
DOCUMENT NUMBER: 131:324165
TITLE: Laundry detergent and/or fabric care compositions comprising an enzyme modified with a cellulose-binding domain
INVENTOR(S): Smets, Johan; Bettiol, Jean-Luc Philippe; Boyer, Stanton Lane; Busch, Alfred
PATENT ASSIGNEE(S): The Procter & Gamble Company, USA
SOURCE: PCT Int. Appl., 96 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9957250	A1	19991111	WO 1998-US8856	19980501
W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, GW, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG				
AU 9872754	A1	19991123	AU 1998-72754	19980501
CA 2330614	AA	19991111	CA 1999-2330614	19990430
WO 9957252	A1	19991111	WO 1999-US9453	19990430
W: BR, CA, CN, IN, JP, MX, US				
RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
BR 9910151	A	20010109	BR 1999-10151	19990430
BR 9910158	A	20010109	BR 1999-10158	19990430
EP 1073724	A1	20010207	EP 1999-920204	19990430
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, PT, IE, FI				
JP 2003522517	T2	20030729	JP 2000-547208	19990430
US 6465410	B1	20021015	US 2000-674471	20001101
US 6468955	B1	20021022	US 2000-674478	20001101

PRIORITY APPLN. INFO.:
WO 1998-US8856 A 19980501
WO 1999-US9453 W 19990430
WO 1999-US9455 W 19990430

AB The present invention relates to a modified enzyme which comprises a catalytically active amino acid sequence of an enzyme, linked via a non-amino acid linking region to an amino acid sequence comprising a Cellulose Binding Domain (CBD). In one embodiment the modified enzyme comprises coupling CBD from Clostridium **cellulovorans** with Endolase (a cellulolytic enzyme from Hansenula insolens) with the PEG linker PEG(NPC)2. CBD conjugates are also prepd. with Savinase (proteolytic enzyme), Purafact (amylolytic enzyme), Lipolase (lipolytic enzyme), Pulpzyme (xylanase), dextransucrase and transferases EC 2.3.2.13 and EC 2.4.1.19, Pectinex (pectinase), and laccase from Myceliophthora thermophila. The present invention further relates to laundry detergent and/or fabric care compns. comprising such modified enzyme(s). These

compns. provide a higher effective concn. of the enzyme at its substrate location and therefore, improved enzymic benefits.

REFERENCE COUNT: 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L6 ANSWER 36 OF 40 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2003) on STN

ACCESSION NUMBER: 95:15704 AGRICOLA
DOCUMENT NUMBER: IND20447798
TITLE: Transcriptional analysis of the Clostridium **cellulovorans endoglucanase** gene, engB.
AUTHOR(S): Attwood, G.T.; Blaschek, H.P.; White, B.A.
CORPORATE SOURCE: AgResearch, Palmerston North, New Zealand
AVAILABILITY: DNAL (QR1.F44)
SOURCE: FEMS microbiology letters, Dec 15, 1994. Vol. 124, No. 3. p. 277-284
Publisher: Amsterdam, The Netherlands : Elsevier Science Publishers.
CODEN: FMLED7; ISSN: 0378-1097
NOTE: Includes references
PUB. COUNTRY: Netherlands
DOCUMENT TYPE: Article
FILE SEGMENT: Non-U.S. Imprint other than FAO
LANGUAGE: English

AB An **endoglucanase** gene, which was shown to be identical to the previously sequenced engB gene [Attwood et al. (1993) Abstr. Ann. Meet. Am. Soc. Microbiol.], was isolated from a Clostridium **cellulovorans** genomic library. Because of the lack of transcriptional information concerning engB we examined its expression in C. **cellulovorans** and in the heterologous hosts Eschenchia coli and C. acetobutylicum following transformation of engB. Northern analysis suggested that both E. coli and C. acetobutylicum produced several transcripts of various sizes. C. **cellulovorans** produced a single transcript of 1600 bp with the relative amount of engB mRNA from cellulose-grown cells being much greater than that from cellobiose-grown cells. Primer extensions showed that engB was transcribed from a single transcription initiation site in C. **cellulovorans** preceded by sequences similar to promoter sequences found in Gram-positive bacteria. Primer extensions from both E. coli and C. acetobutylicum strains containing the engB gene showed multiple transcription initiation sites, none of which corresponded to the site determined in C. **cellulovorans**. We conclude that transcriptional control of the engB gene is less stringent in heterologous backgrounds and postulate that expression of the engB gene in C. **cellulovorans** is increased in the presence of cellulose.

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ACCESSION NUMBER: 92:677920 SCISEARCH
THE GENUINE ARTICLE: JY118
TITLE: A NOVEL POLYSACCHARIDE HYDROLASE **CDNA** (CELD) FROM NEOCALLIMASTIX-PATRICIARUM ENCODING 3 MULTIFUNCTIONAL CATALYTIC DOMAINS WITH HIGH **ENDOGLUCANASE**, CELLOBIOHYDROLASE AND XYLANASE ACTIVITIES
AUTHOR: XUE G P (Reprint); GOBIUS K S; ORPIN C G
CORPORATE SOURCE: CSIRO, DIV TROP CROPS & PASTURES, 306 CARMODY RD, ST LUCIA, QLD 4067, AUSTRALIA (Reprint)
COUNTRY OF AUTHOR: AUSTRALIA
SOURCE: JOURNAL OF GENERAL MICROBIOLOGY, (NOV 1992) Vol. 138, Part 11, pp. 2397-2403.
ISSN: 0022-1287.
DOCUMENT TYPE: Article; Journal
FILE SEGMENT: LIFE
LANGUAGE: ENGLISH
REFERENCE COUNT: 34

ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

AB A plant polysaccharide hydrolase **cDNA**, designated celD, was isolated from a **cDNA** library of the rumen fungus Neocallimastix patriciarum. The enzyme encoded by celD had **endoglucanase**, cellobiohydrolase and xylanase activities. Deletion analysis revealed that celD **cDNA** can be truncated to code for three catalytically active domains. Each domain had the same substrate specificity as the enzyme produced by the untruncated celD and also possessed cellulose-binding capacity. Substrate competition studies showed that carboxymethylcellulose and xylan appear to compete with methylumbelliferyl cellobioside for the same active site within each domain. Expression of celD transcript in the rumen fungus was constitutive and was not affected by the presence of cellulose in the culture medium.

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ACCESSION NUMBER: 1992:229198 CAPLUS
DOCUMENT NUMBER: 116:229198
TITLE: Nucleotide sequence and characteristics of **endoglucanase** gene engB from Clostridium **cellulovorans**
AUTHOR(S): Foong, Frances; Hamamoto, Tetsuo; Shoseyov, Oded; Doi, Roy H.
CORPORATE SOURCE: Dep. Biochem. Biophys., Univ. California, Davis, CA, 95616, USA
SOURCE: Journal of General Microbiology (1991), 137(7), 1729-36
CODEN: JGMIAN; ISSN: 0022-1287
DOCUMENT TYPE: Journal
LANGUAGE: English
AB An **endoglucanase** gene, engB, from C. **cellulovorans**, previously cloned into pUC19, has been further characterized and its product investigated. The enzyme, EngB, encoded by the gene was secreted into the periplasmic space of Escherichia coli. The enzyme was active against CM-cellulose, xylan and lichenan but not Avicel (cryst. cellulose). The sequenced gene showed an open reading frame of 1323 bp and coded for a protein with a mol. mass of 48.6 kDa. The mRNA contained a typical gram-pos. ribosome-binding site sequence GGAGG and a sequence coding for a putative signal peptide. There is high amino acid and base sequence homol. between the N-terminal regions of EngB and another C. **cellulovorans endoglucanase**, EngD, but they differ significantly in their C-termini. Deletion analyses revealed that up to 32 amino acids of the N-terminus and 52 amino acids of the C-terminus were not required for catalytic activity. The conserved reiterated domains at the C-terminus of EngB were similar to those from **endoglucanases** from other cellulolytic bacteria. According to deletion analyses, this region is not needed for catalytic activity.

L6 ANSWER 39 OF 40 CAPLUS COPYRIGHT 2003 ACS on STN DUPLICATE 4
ACCESSION NUMBER: 1990:453634 CAPLUS
DOCUMENT NUMBER: 113:53634
TITLE: Cloning of Clostridium **cellulovorans** endo-1,4-.beta.-glucanase genes
AUTHOR(S): Shoseyov, Oded; Hamamoto, Tetsuo; Foong, Frances; Doi, Roy H.
CORPORATE SOURCE: Dep. Biochem. Biophys., Univ. California, Davis, CA, 95616, USA
SOURCE: Biochemical and Biophysical Research Communications (1990), 169(2), 667-72
CODEN: BBRCA9; ISSN: 0006-291X
DOCUMENT TYPE: Journal
LANGUAGE: English
AB A C. **cellulovorans** lambda gt11 gene bank was screened for endo-1,4-.beta.-glucanase [EC 3.2.1.4, EGase, Carboxy Me **Cellulase** (CMCase)] genes using a chromogenic substrate. Three genes (engA, engB, and engC) were isolated. The engB expressed that most active CMCase. The

engA encoded a bifunctional enzyme that displayed endo-1,4-.beta.-glucanase and .beta.-glucosidase activities. The 3 recombinant glucanases, when expressed in Escherichia coli, were partially degraded into multiform active enzymes as evidenced by their SDS-PAGE-CMC zymograms. None of the **clones** could degrade cryst. cellulose, thus supporting the hypothesis that the integrity of the C. **cellulovorans cellulase** complex was essential for its true **cellulase** activity.

L6 ANSWER 40 OF 40 CAPLUS COPYRIGHT 2003 ACS on STN DUPLICATE 5
ACCESSION NUMBER: 1991:76285 CAPLUS
DOCUMENT NUMBER: 114:76285
TITLE: A clostridium **cellulovorans** gene, engD, codes for both endo-.beta.-1,4-glucanase and cellobiosidase activities
AUTHOR(S): Hamamoto, Tetsuo; Shoseyov, Oded; Foong, Frances; Doi, Roy H.
CORPORATE SOURCE: Dep. Biochem. Biophys., Univ. California, Davis, CA, 95616, USA
SOURCE: FEMS Microbiology Letters (1990), 72(3), 285-8
CODEN: FMLED7; ISSN: 0378-1097
DOCUMENT TYPE: Journal
LANGUAGE: English
AB A 5.8 kbp DNA fragment from C. **cellulovorans** (ATCC 35296) contg. the endo-.beta.-1,4-glucanase (1,4-.beta.-D-glucan glucanohydrolase, carboxymethylcellulase, CMCase; EC 3.2.1.4) gene (engD) was cloned in Escherichia coli. The **clone** harboring a subcloned 3.8 kb fragment in plasmid, pEQ52V, produced an enzyme that showed both endo-.beta.-1,4-glucanase activity as well as cellobiosidase activity. Zymograms with the engD encoded enzyme with carboxymethyl-cellulose as the substrate indicated that the mol. mass of the active protein was 50,000.

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Characterization of the cellulose-binding domain of the Clostridium cellulovorans cellulose-binding protein A.

Goldstein MA, Takagi M, Hashida S, Shoseyov O, Doi RH, Segel IH.

Department of Biochemistry and Biophysics, University of California Davis 95616.

Cellulose-binding protein A (CbpA), a component of the cellulase complex of Clostridium cellulovorans, contains a unique sequence which has been demonstrated to be a cellulose-binding domain (CBD). The DNA coding for this putative CBD was subcloned into pET-8c, an Escherichia coli expression vector. The protein produced under the direction of the recombinant plasmid, pET-CBD, had a high affinity for crystalline cellulose. Affinity-purified CBD protein was used in equilibrium binding experiments to characterize the interaction of the protein with various polysaccharides. It was found that the binding capacity of highly crystalline cellulose samples (e.g., cotton) was greater than that of samples of low crystallinity (e.g., fibrous cellulose). At saturating CBD concentration, about 6.4 mumol of protein was bound by 1 g of cotton. Under the same conditions, fibrous cellulose bound only 0.2 mumol of CBD per g. The measured dissociation constant was in the 1 microM range for all cellulose samples. The results suggest that the CBD binds specifically to crystalline cellulose. Chitin, which has a crystal structure similar to that of cellulose, also was bound by the CBD. The presence of high levels of cellobiose or carboxymethyl cellulose in the assay mixture had no effect on the binding of CBD protein to crystalline cellulose. This result suggests that the CBD recognition site is larger than a simple cellobiose unit or more complex than a repeating cellobiose moiety. This CBD is of particular interest because it is the first CBD from a completely sequenced nonenzymatic protein shown to be an independently functional domain.

PMID: 8376323 [PubMed - indexed for MEDLINE]

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Roles of the catalytic domain and two cellulose binding domains of Thermomonospora fusca E4 in cellulose hydrolysis.

Irwin D, Shin DH, Zhang S, Barr BK, Sakon J, Karplus PA, Wilson DB.

Department of Biochemistry, Molecular and Cell Biology, Cornell University, Ithaca, New York 14853, USA.

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Thermomonospora fusca E4 is an unusual 90.4-kDa endocellulase comprised of a catalytic domain (CD), an internal family IIIc cellulose binding domain (CBD), a fibronectinlike domain, and a family II CBD. Constructs containing the CD alone (E4-51), the CD plus the family IIIc CBD (E4-68), and the CD plus the fibronectinlike domain plus the family II CBD (E4-74) were made by using recombinant DNA techniques. The activities of each purified protein on bacterial microcrystalline cellulose (BMCC), filter paper, swollen cellulose, and carboxymethyl cellulose were measured. Only the whole enzyme, E4-90, could reach the target digestion of 4.5% on filter paper. Removal of the internal family IIIc CBD (E4-51 and E4-74) decreased activity markedly on every substrate. E4-74 did bind to BMCC but had almost no hydrolytic activity, while E4-68 retained 32% of the activity on BMCC even though it did not bind. A low-activity mutant of one of the catalytic bases, E4-68 (Asp55Cys), did bind to BMCC, although E4-51 (Asp55Cys) did not. The ratios of soluble to insoluble reducing sugar produced after filter paper hydrolysis by E4-90, E4-68, E4-74, and E4-51 were 6.9, 3.5, 1.3, and 0.6, respectively, indicating that the family IIIc CBD is important for E4 processivity.

PMID: 9537366 [PubMed - indexed for MEDLINE]

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Mutation analysis of the cellulose-binding domain of the Clostridium cellulovorans cellulose-binding protein A.

Goldstein MA, Doi RH.

Section of Molecular and Cellular Biology, University of California, Davis 95616.

Cellulose-binding protein A (CbpA) has been previously shown to mediate the interaction between crystalline cellulose substrates and the cellulase enzyme complex of Clostridium cellulovorans. CbpA contains a family III cellulose-binding domain (CBD) which, when expressed independently, binds specifically to crystalline cellulose. A series of N- and C-terminal deletions and a series of small internal deletions of the CBD were created to determine whether the entire region previously described as a CBD is required for the cellulose-binding function. The N- and C-terminal deletions reduced binding affinity by 10- to 100-fold. Small internal deletions of the CBD resulted in substantial reduction of CBD function. Some, but not all, point mutations throughout the sequence had significant disruptive effects on the binding ability of the CBD. Thus, mutations in any region of the CBD had effects on the binding of the fragment to cellulose. The results indicate that the entire 163-amino-acid region of the CBD is required for maximal binding to crystalline cellulose.

PMID: 7961505 [PubMed - indexed for MEDLINE]

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Purification of a fusion protein using the family VI cellulose-binding domain of Clostridium stercorarium XynA.

Sakka K, Karita S, Kimura T, Ohmiya K.

Faculty of Bioresources, Mie University, Tsu, Japan.

PMID: 9928129 [PubMed - indexed for MEDLINE]

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Proteins. 2003 Mar 1;50(4):620-8.
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